ATTN: Francisco Guzman - California Water Plan Update 2018 Public Review Draft

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To: DWR CWP Comments <cwpcom@water.ca.gov>;

Mr. Guzman:

Please accept the comments below, for consideration by CADWR, in response to its request for review of the Draft Sustainability Outlook Indicator Descriptions and Methodology, dated December 2018, prepared by Stantec, Inc. These comments are offered from my perspective as:

- Active member of the AWWA Water Loss Control Committee (WLCC) for over 10 years,
- Chair of the WLCC's Water Loss Audit Regulatory Practices Committee,
- Member of the WLCC's Strategic Business Planning and Education and Outreach Committees,
- Member of the WLCC's Non-Revenue Water (NRW) Performance Indicators Task Force (PITF),
- Principal Investigator for Water Research Foundation (WRF) Project 4695 – Guidance for Implementing an Effective Water Loss Control Plan (forthcoming),
- Project Manager and co-author of an AWWA White Paper on the State of Water Loss Control in Drinking Water Utilities (AWWA, 2016) and an AWWA TEC Grant Project Report on Assessment of Performance Indicators for NRW Target-Setting and Progress Tracking (forthcoming), and from
- Experience assisting several US water systems, including some California systems, ranging widely in size, as they improve their NRW performance.

As such, these comments do not constitute an official position of the American Water Works Association.

CADWR is to be commended for initiating development of sustainability indicators, one of which is related to the real loss component of NRW (Indicator for Healthy Economy (HE) 3 – Distribution System Leaks and Losses), as described on pp. 4-88 through 90 of the above-referenced document. The WLCC's PITF has been working to evaluate and recommend an improved set of NRW performance indicators (to complement or supplant some of those presently calculated in AWWA's Free Water Audit Software, v5.0, 2014) to address the needs of water utilities, regulatory agencies and their stakeholders and welcomes the opportunity to further examine water resource sustainability as a factor to be considered in that process. The improved set of NRW performance indicators may also better reflect financial factors that can inform water systems of the economic impact of water losses on its operating costs and, thus, water affordability for their customers. It is anticipated that the PITF's recommendations will be presented later in 2019.

Regarding the initially proposed indicator HE 3, please consider the comments presented under each excerpt (emphasis added) from the above-referenced pages of the public review document, taken in the order they appear:

1. "**The target outcome for this indicator is zero distribution system leaks and losses…"**

While this target is laudable, it is quite likely unattainable and therefore unrealistic. Guidance provided in relevant water industry references utilized to evaluate candidate water loss control interventions, particularly for control of real losses, encourages water systems to control such water losses economically. Expending financial resources that exceed the value of the water lost will, ultimately, adversely affect the affordability of the water supplied to the system's customers. A more realistic target would be based on such a consideration, as discussed further in comment 6 below.

2. **"Scale: Regional", "Screening Status: Watershed"**

A real loss indicator to be implemented as an agreed upon target, on a regional or watershed basis for water systems that withdraw water from the subject watershed, is a desirable objective. Such an approach can prioritize attention and investment to provide and sustain the degree of real loss control needed.

One example of a watershed-focused regulatory entity that seeks to encourage improved water loss performance is the Delaware River Basin Commission. Another regional approach has recently been adopted in the metropolitan Atlanta, Georgia area, wherein roughly 50 member water systems must achieve a goal of either 60 or 35 gallons per connection per day by 2025. This two-tiered unit real loss structure is based statistically on water loss audit results submitted annually to the Georgia EPD. However, it does not directly emanate from a quantified withdrawal management-based approach, and the Metropolitan North Georgia Water Planning District does allow the member systems to justify higher targets if they can justify this on an economic basis, as noted in comment 1 above.

3. **"Assessing distribution leaks and losses is more applicable to urban areas and developed systems."**

In addition to guidance available from AWWA, USEPA and WRF, there are numerous programs provided by organizations such as the Rural Water Association, Rural Community Assistance Program, and the Environmental Finance Center Network that share knowledge on control of real (and apparent) water losses with small systems. Proven and evolving technologies and methods for real loss control are being practiced successfully by increasing numbers of small systems in the US. A watershed-based approach for water loss control, such as suggested by adoption of HE 3 for real losses, should recognize the ability of smaller systems to participate meaningfully in achieving a shared real loss goal, consistent with economic considerations.

It is recognized that inclusion of smaller systems in such an approach would likely require expansion of the water loss audit submittal program to document their performance and use the results to develop appropriate performance targets or goals. Suitable training programs have been developed to assist smaller systems and should be readily adaptable in California.

4. **"Losses are not reported by all wholesale suppliers, but are required from urban water suppliers."**

The water loss audit process in California requires that urban water suppliers estimate the error associated with supply meters (for local, import or export supply). This is fundamental for obtaining a reasonably accurate calculation of real losses in the "top-down" approach embodied in the AWWA Free Water Audit Software (FWAS).

Unfortunately, the reporting of master supply meter error for imported supply obtained from wholesalers is often limited to the calibration error associated with the secondary or instrumentation element of the flow meters and does not document the error of the primary flow element. If the primary flow element is over-reporting the water supplied to the retail system, the retail system could be led to expend considerable sums of money on finding and fixing leakage that does not exist, while the wholesale system underestimates the volume of leakage that could be occurring in its system upstream of the wholesale meter. Thus, all systems should review their water supply contracts to confirm responsibility for determining and reporting primary flow meter error and incorporate the results in water loss audits. This would provide a more reliable basis on which to establish a real loss performance indicator such as HE 3.

5. **"Table 4-11 Water Losses Reported by Hydrologic Region for Urban Water Supplies over 12 Months"**

This table includes volumetric results for "water losses". The context for the entire document suggests these are only real losses. However, it is not clear if these values are representing real losses or total losses, which would include apparent losses that are most often associated with customer meter inaccuracy.

6. **"Leak Detection programs are typically established following the determination of the percentage of water loss and a benefit-cost analysis to verify economic feasibility. Distribution systems with a high percentage of water loss may require a leak detection program or upgrades to existing infrastructure. This indicator [HE 3] may also show what areas of California most require Leak Detection programs."**

While the percentage-based justification for implementing real loss control interventions may be typical, such a basis can be very misleading.

The percentage of water lost is determined by dividing the volume lost by the volume delivered. Without making any improvement in the volume lost, the percentage can be reduced by simply selling (and delivering) more water, which runs counter to the objectives of a water loss control program and the HE 3 indicator.

A more meaningful basis is to focus on managing the volume of water lost (expressed as a total volume of real loss and/or as a unit volume per connection per day, in the context of HE 3) and its monetary value (with the value to be based on the variable production cost in water-rich areas, or on retail cost in water-scarce areas), and then apply the recommended benefit-cost analysis.

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This concludes my commentary on the proposed indicator HE 3. Thank you for the opportunity to comment.

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